Claims

[c1]　1. An apparatus for processing packets comprising:

an inbound memory for receiving data packets;

an outbound memory for transmitting data packets; and

circuitry capable of dynamically allocating memory from the inbound memory for use by the outbound memory or from the outbound memory for use by the inbound memory.

[c2]　2. The apparatus of claim 1 wherein the outbound and inbound memories are arranged to have a size that is smaller than a maximum frame size of the data packet to be processed.

[c3]　3. The apparatus of claim 1 further comprising:

a first processor for controlling the inbound memory; and

a second processor for controlling the outbound memory.

[c4]　4. The apparatus of claim 3 wherein the first processor controls the receiving of the data packets and processing of the received data packets.

[c5]   5. The apparatus of claim 4 wherein the outbound memory transmits the processed data packets.

[c6]   6. The apparatus of claim 5 wherein the first and second processors communicate with one another concerning available memory within the inbound and outbound memories, respectively.

[c7]   7. A method of receiving and transmitting data packets, the method comprising the steps of:

   receiving data packets in an inbound memory buffer;

   transmitting data packets with an outbound memory buffer; and

   dynamically allocating memory from the inbound memory buffer for use by the outbound memory buffer or the outbound memory buffer for use by the inbound memory buffer.

[c8]   8. The method of claim 7 wherein the step of dynamically allocating includes the steps of:

   determining that the inbound memory buffer requires additional memory; and

   dynamically allocating memory from the outbound memory buffer for use by the inbound memory.

[c9]   9. The method of claim 7 wherein the step of dynamically allocating includes the steps of:

determining that the outbound memory buffer requires additional memory; and

dynamically allocating memory from the inbound memory buffer for use by the outbound memory buffer.

[c10] 10. An apparatus for receiving and transmitting data packets, the apparatus comprising:

means for receiving data packets in an inbound memory buffer;

means for transmitting data packets with an outbound memory buffer; and

means for dynamically allocating memory from the inbound memory buffer for use by the outbound memory buffer or the outbound memory buffer for use by the inbound memory buffer.

[c11] 11. The apparatus of claim 10 wherein the means for dynamically allocating includes:

means for determining that the inbound memory buffer requires additional memory; and

means for dynamically allocating memory from the outbound memory buffer for use by the inbound memory.

[c12] 12. The apparatus of claim 10 wherein the means for dynamically allocating includes:

means for determining that the outbound memory buffer requires additional memory; and

means for dynamically allocating memory from the inbound memory buffer for use by the outbound memory buffer.